

UNIVERSITY OF CALIFORNIA  
COLLEGE OF AGRICULTURE  
BERKELEY, CALIFORNIA

AGRICULTURAL EXPERIMENT STATION  
E. J. WICKSON, DIRECTOR

CIRCULAR No. 42

(APRIL, 1909)

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Pacific Coast Entomological Conference  
and  
Special Short Course  
in  
Horticulture

APRIL AND MAY  
1909

BERKELEY  
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# PACIFIC COAST ENTOMOLOGICAL CONFERENCE

APRIL 20 TO 23, 1909

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The insect problems of the Pacific slope are so different from those on the other side of the Rocky Mountains, that a special organization of Western Entomologists is necessary to secure a satisfactory discussion of our peculiar problems. With the hope that such an organization might be organized, the entomologist of this experiment station desires to invite all interested in the economic entomology of this region to assemble in convention at the University of California on the twentieth to twenty-third of April.

The following preliminary programme has been arranged. We cannot give, at the present time, more than a portion of the titles of the papers to be read, since many who have promised to be present and present papers have not as yet given us the titles of the same. Those given below will be sufficient, however, to indicate that it will be a very profitable occasion:

## PRELIMINARY PROGRAMME FOR THE CONVENTION OF ENTOMOLOGISTS.

### **Tuesday Afternoon.**

Results of our Work with Lime Sulphur Spray. By Prof. A. B. CORDLEY, Professor of Zoology and Entomology, and Dean of the School of Agriculture, Oregon Agricultural College, Corvallis, Oregon.

The Uses and Abuses of the Lime Sulphur Solution as a Fungicide and Insecticide. By GEO. F. SCHORR, Manager California Rex Spray Co., Benicia, California.

Making of Lime Sulphur Solution in Small Orchards. By H. P. STABLER, Horticultural Commissioner, Sutter County, Yuba City, California.

### **Tuesday Evening.**

The Manufacture of Miscible Oils. By R. R. ROGERS, Manager of the Rogers Chemical Co., San Francisco.

The Manufacturer of Insecticides. By E. E. LUTHER, Manager of the California Spray Chemical Co., Watsonville, California.

### Wednesday Morning.

The Destruction of European Elm Scale, (*Gossyparia spuria*) by means of a Strong Stream of Water. By Prof. S. B. DOTEN, Professor of Entomology, University of Nevada, Reno, Nevada.

Experiments in the Eradication of the Codling Moth. By Prof. FABIAN GARCIA, Professor of Horticulture, New Mexico College of Agriculture and Mechanic Arts, Agricultural College, New Mexico.

The Time of Spraying for Codling Moth. By Prof. C. W. WOODWORTH, University of California.

### Wednesday Afternoon.

Insecticide Control. By Prof. G. E. COLBY, University of California.

Studies in the Life History of the Orange Scale. By Prof. H. J. QUAYLE, University of California, in charge of Entomological work at the Southern California Pathological Laboratory, Whittier.

The Citrus Mealy Bug (*Pseudococcus citri*). By P. E. SMITH, Horticultural Commissioner for Ventura County, Santa Paula.

### Wednesday Evening.

#### EXHIBITS.

Insecticide Apparatus. Bean Spray Pump Co.

Insecticide Material. Bean Spray Pump Co.

Insecticide Material. California Rex Spray Co.

Insecticide Material. California Spray Chemical Co.

Insecticide Material. Rogers Chemical Co.

Testing of Insecticides.

Analytical Methods Used in Control Work. By Prof. COLBY.

Testing of Safety to Plants. By Mr. VOLCK.

Destruction of Insects.

Mosquito Control Work. By Mr. J. S. HUNTER.

Insect Collections.

A New Insect Box, by Prof. WOODWORTH.

A new Fruit Pest from Santa Clara Valley and its Parasites.

By Mr. E. L. MORRIS.

Insects as Related to Disease. By Prof. HERMS.

Fleas and Bubonic Material. By Mr. M. B. MITZMAIN.

Arrangement of Insect Collections. By M. C. FUCHS.

Beekeeping Apparatus. By Mr. R. BENTON.

Methods of Study.

Ant Nests for Study. Mr. L. H. DAY.

Physiological Apparatus. Prof. HERMS.

Production of Wings in Aphids. Prof. CLARKE.

Instruction.

French Anatomical Lantern slides. Prof. WOODWORTH.

Laboratory Directions and Work. Prof. WOODWORTH.

Publications.

Illustrations of Ants. Miss M. H. LANKTREE.

Photographic Illustrations of Scale Insects and Methods of Production. Prof. S. B. DOTEN.

Reading Course Work in Entomology. Prof. CLARKE.

#### **Thursday Morning.**

Visit to University Ant Laboratory, East Oakland.

#### **Thursday Afternoon.**

Forest Insects. By Prof. R. W. DOANE, Professor of Entomology, Leland Stanford Junior University, Palo Alto, California.

The Swarming Impulse and its Control in the Apiary. By Mr. R. BENTON, University of California.

Bee Pasturage in California: A Review of the Honey Producing Flora. By Mr. M. C. Richter, University of California.

The Mailing of Queen Bees. By Mr. BENTON.

Lantern Slide Exhibit on Structures of the Bee, Followed by a Live Bee Demonstration in the Lecture Room. By Mr. BENTON.  
(At the close of the session a visit will be paid to the University Apiary.)

#### **Thursday Evening.**

Medical Entomology, its Scope and Methods. By Prof. W. B. HERMS, University of California.

A Comparative Study of the Mouthparts of the Flea and its Relation to Disease Transmission. By Mr. J. C. NAG, University of California.

Bionomics of Pacific Coast Fleas and their Relation to Man. By M. B. MITZMAIN, Technical Assistant U. S. Marine Hospital, San Francisco.

**Friday Morning.**

Discussion and Demonstration of Methods in Insect Photography with Especial Reference to Scale Insects. (a) The Field of Usefulness in such Photography. (b) Methods of Negative Making, in Printing, and in Retouching. By Prof. S. B. DOTEN.

Methods used in Study of Sense Reactions. By Prof. HERMS.

The Light Reactions of the Housefly. By Mr. A. B. SHAW, University of California.

**Friday Afternoon.**

Our Future Crop of Economic Entomologists. By Mr. J. B. HICKMAN, Horticultural Commissioner, Santa Cruz County, Ariz., California.

The Teaching of Elementary Entomology. By Prof. WOODWORTH, University of California.

## SPECIAL SHORT COURSE IN HORTICULTURE.

April 26 to May 21, 1909.

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Since the law providing for county horticultural commissioners and inspectors as recently amended requires the holding of examinations to secure lists of eligibles from which the Supervisors of each county shall make appointment, the Agricultural Department of the University desiring to assist in making this new requirement accomplish the purpose intended by the legislature has provided as supplementary to the above conference the course of instruction outlined below, to afford instruction of a more elementary character.

It must not be supposed that this course is sufficient to prepare a prospective horticultural officer for the duties contemplated by this act, but it will certainly aid him by supplementing his present knowledge, and will serve as a thorough review of the subject that will place in a concrete and available form some of the information, concerning which the examining commission will be liable to ask, in order to judge of the candidate's qualification.

No charge whatever is made for tuition in this course and no entrance requirement will be insisted upon except that the student must be at least 18 years of age. Students in this course are registered as special short course students of the Agricultural Department.

### THE INSTRUCTION.

The work presented in this course is calculated to cover as fully as possible the problems of the work of the commissioner and inspector and in a thoroughly practical manner. The mornings will be chiefly occupied by lectures, the afternoons by laboratory work, and the evenings by library work or by special lectures on more general topics.

Besides the single lectures on several topics given in the schedule of exercises, attention is called to the following series of lectures and demonstrations:

**Plant Physiology.** Two lectures by Prof. W. S. V. OSTERHOUT, April 26 and 27, at 9:00 a.m.

**Weeds and their control.** Four lectures by Prof. H. M. HALL, April 26-29, at 10:00 a.m.



**Horticultural Laws.** Fourteen lectures by Prof. C. W. WOODWORTH, April 26-May 10, at 11:00 a.m.

**Excursions for field study** of fruit and ornamental plants and their pests, conducted by Mr. R. E. MANSELL, assisted by Professors WOODWORTH and BABCOCK. Tuesday afternoons, April 27th, May 4th and 11th.

**The Microscope and its use.** Four lectures and four practical exercises by Prof. W. B. HERMS. Afternoons of April 28th, 29th, 30th, and May 3rd.

**Insecticide Treatments.** Five lectures by Prof. WOODWORTH, April 29, May 1, 4, 6, and 8, at 9:00 a.m.

**Horticultural Crops.** Four lectures by Prof. E. J. WICKSON, April 30, May 5, 7 and 10, at 10:00 a.m.

**Fertilizers.** Three lectures by Professor J. S. BURD, April 28, 30, and May 3, at 9:00 a.m.

**Manufacture and Composition of Insecticides and Fungicides.** Five lectures by Prof. G. E. COLBY, May 1, 4, 6, 8 and 11, at 10:00 a.m.

**Identification of Insects.** Seven lectures and seven practical exercises, by Prof. WOODWORTH, afternoons of May 6, 7, 8, 10, 13, 14 and 17.

**Identification of Plants** handled by the nursery trade. Four lectures and demonstrations by Mr. MANSELL, May 3, 5, 7 and 10, at 10:00 a.m.

**Recent Entomological Problems** in California. Two lectures by Professor WOODWORTH, May 11 and 21, at 11:00 a.m.

**Diseases of the Vine**, by Professor F. T. BIOLETTI, May 13, 14, at 9:00 a.m. and morning of May 15.

**Control of Important Insects.** Six lectures by Prof. WOODWORTH, May 13, 14, 17, 18, 19 and 20, at 11:00 a.m.

**Horticultural Practices.** Seven lectures by Prof. WICKSON, May 13, 14, 17, 18, 19, 20 and 21, at 10:00 a.m.

**Foreign Fruit Pests.** Four lectures by Prof. HERMS, May 18, 19 and 20, at 9:00 a.m.

**Plant Disease.** Five lectures and four practical demonstrations by Prof. BABCOCK, afternoons of May 18, 19, 20 and 21 and May 21, at 9:00 a.m.

The title of each lecture or practical exercise is given in the schedule below:



## SCHEDULE OF CLASS EXERCISES.

## MONDAY, APRIL 26.

- 9:00 a.m.—Food and Growth of Plants. Prof. OSTERHOUT.  
 10:00 a.m.—Johnson Grass and other Troublesome Grasses. Prof. HALL.  
 11:00 a.m.—History of Horticultural Legislation in California. Prof. WOODWORTH.  
 2:00 p.m.—Selection, Use and Care of the Pocket Lense. Prof. WOODWORTH.  
 3:00 p.m.—The Reading Course in Entomology. Prof. W. T. CLARKE.  
 4:00 p.m.—Life Histories of Insects,—Breeding Cage Methods. Prof. W. B. HERMS.

## TUESDAY, APRIL 27.

- 9:00 a.m.—Production of Seeds and Fruit. Prof. OSTERHOUT.  
 10:00 a.m.—Mustard and other Annual Weeds. Prof. HALL.  
 11:00 a.m.—The Pests Specified in Local Horticultural Laws. Prof. WOODWORTH.  
 2:00 to 5:00 p.m.—Fruits and Ornamental Plants and their Pests. Excursion about University Grounds. Mr. MANSELL, assisted by Profs. WOODWORTH and BABCOCK.

## WEDNESDAY, APRIL 28.

- 9:00 a.m.—The Plant, the Soil and the Need for Fertilization. Prof. BURD.  
 10:00 a.m.—Thistles, Cockleburrs, and Similar Weeds. Dr. HALL.  
 11:00 a.m.—The Pests Actually Considered in Horticultural Inspection Work. Prof. WOODWORTH.  
 2:00 p.m.—The Making of Microscopical Preparations with Balsam and Jelly. Prof. HERMS.  
 3:00-5:00 p.m.—Practical Exercise in Mounting Specimens. Prof. HERMS.

## THURSDAY, APRIL 29.

- 9:00 a.m.—Action of Arsenicals upon Insects. Prof. WOODWORTH.  
 10:00 a.m.—Morning-glories and Poisonous Weeds. Dr. HALL.  
 11:00 a.m.—The Laws of Nuisances as Related to Plant Pests. Prof. WOODWORTH.  
 2:00 p.m.—Potash and Staining Methods for Microscopical Mounts. Prof. HERMS.  
 3:00-5:00 p.m.—Practical Exercise in Mounting Specimens. Prof. HERMS.

## FRIDAY, APRIL 30.

- 9:00 a.m.—Fertilizer Materials. Prof. BURD.  
 10:00 a.m.—The Management of Citrus Trees. Prof. WICKSON.  
 11:00 a.m.—Eradication of Fruit Pests. Prof. WOODWORTH.  
 2:00 p.m.—The Microscope, its Use and Care. Prof. HERMS.  
 3:00-5:00 p.m.—Practical Exercise in Study of Microscopical Preparations. Prof. HERMS.

## SATURDAY, MAY 1.

- 9:00 a.m.—Action of Arsenicals upon Foliage. Prof. WOODWORTH.  
 10:00 a.m.—The Composition of Arsenical Insecticides. Prof. G. E. COLBY.  
 11:00 a.m.—The Practice of Orchard Inspection. Prof. WOODWORTH.

## MONDAY, MAY 3.

- 9:00 a.m.—The Valuation of Commercial Fertilizers. Prof. BURD.  
 10:00 a.m.—The Species of Palms and Related Plants. Mr. MANSELL.  
 11:00 a.m.—The Inspection of Nurseries and Shipments. Prof. WOODWORTH.  
 2:00 p.m.—The Labeling and Care of Microscopical Preparations. Prof. HERMS.  
 3:00-5:00 p.m.—Practical Exercise in the Finishing of Microscopical Mounts. Prof. HERMS.

## TUESDAY, MAY 4.

- 9:00 a.m.—The Use of Lime Sulphur Sprays. Prof. WOODWORTH.  
 10:00 a.m.—The Manufacture and Composition of Lime Sulphur Sprays. Prof. COLBY.  
 11:00 a.m.—The Town Lot as an Inspector's Problem. Prof. WOODWORTH.  
 1:00-5:00 p.m.—Fruit and Ornamental Plants and their Pests. Excursion to Golden Gate Park conducted by Mr. MANSELL, assisted by Professors WOODWORTH and BABCOCK.

## WEDNESDAY, MAY 5.

- 9:00 a.m.—The Care of Stone Fruits. Prof. E. J. WICKSON.  
 10:00 a.m.—The Species of Eucalyptus and Acacia. Mr. MANSELL.  
 11:00 a.m.—The Use of Parasites for Fruit Pests. Prof. WOODWORTH.  
 2:00 p.m.—The Method of Identifying Diaspinous Scales. Prof. WOODWORTH.  
 3:00-5:00 p.m.—Practical Exercise in Identifying Insects. Prof. WOODWORTH.

## THURSDAY, MAY 6.

- 9:00 a.m.—Distillates and Emulsions. Prof. WOODWORTH.  
 10:00 a.m.—California Petroleums. Prof. COLBY.  
 11:00 a.m.—Horticultural Laws of the Eastern States. Prof. WOODWORTH.  
 2:00 p.m.—Characters which Distinguish Species in the Subfamily Coccinae. Prof. WOODWORTH.  
 3:00-5:00 p.m.—Practical Exercise in Identifying Insects. Prof. WOODWORTH.

## FRIDAY, MAY 7.

- 9:00 a.m.—The Care of Pomaceous Fruits. Prof. E. J. WICKSON.  
 10:00 a.m.—The Specific Characteristics of Fruit Trees and Shrubs. Mr. MANSELL.  
 11:00 a.m.—Horticultural Laws of Foreign Countries. Prof. WOODWORTH.  
 2:00 p.m.—Characters which Distinguish Species in Dactylopinæ and smaller Subfamilies. Prof. WOODWORTH.  
 3:00-5:00 p.m.—Practical Exercise in Identifying Insects. Prof. WOODWORTH.

## SATURDAY, MAY 8.

- 9:00 a.m.—Cyanide Fumigation Practice. Prof. WOODWORTH.  
 10:00 a.m.—Cyanide and Sulphuric Acid. Prof. COLBY.  
 11:00 a.m.—Ancient Horticultural Legislation. Prof. WOODWORTH.

## MONDAY, MAY 10.

- 9:00 a.m.—Characteristics of California Horticulture. Prof. WICKSON.  
 10:00 a.m.—The Species of Ornamental Herbaceous Plants. Mr. MANSELL.  
 11:00 a.m.—Ideals of Inspection Work. Prof. WOODWORTH.  
 2:00 p.m.—Characters Used in Identifying Species of White Flies. Prof. WOODWORTH.  
 3:00-5:00 p.m.—Practical Exercise in Insect Identification. Prof. WOODWORTH.

## TUESDAY, MAY 11.

- 9:00 a.m.—Classification of California Soils. Prof. LOUGHRIDGE.  
 10:00 a.m.—Copper Sulphate and Bordeaux Mixture. Prof. COLBY.  
 11:00 a.m.—Recent Problems—The White Fly. Prof. WOODWORTH.  
 1:00-6:00 p.m.—Fruit and Ornamental Plants and their Pests. Excursion to California Nursery at Niles, conducted by Mr. Mansell, assisted by Professors WOODWORTH and BABCOCK.

## WEDNESDAY, MAY 12.

Commencement Exercises of the University.

## THURSDAY, MAY 13.

- 9:00 a.m.—The Phylloxera Problem. Prof. BIOLETTI.  
 10:00 a.m.—Propagation of Fruit Trees in California. Prof. WICKSON.  
 11:00 a.m.—The Control of the Blackscale. Prof. WOODWORTH.  
 2:00 p.m.—The Diagnostic Characters in Aphidae. Prof. WOODWORTH.  
 3:00-5:00 p.m.—Practical Exercise in the Identification of Insects. Prof. WOODWORTH.

## FRIDAY, MAY 14.

- 9:00 a.m.—Anaheim Disease and other Vine Diseases. Prof. BIOLETTI.  
 10:00 a.m.—Choice of Land and Orchard Planting. Prof. WICKSON.  
 11:00 a.m.—The Control of the San Jose Scale. Prof. WOODWORTH.  
 2:00 p.m.—Diagnostic Characters in Lepidoptera. Prof. WOODWORTH.  
 3:00-5:00 p.m.—Practical Exercise in the Identification of Insects. Prof. WOODWORTH.

## SATURDAY, MAY 15.

- 9:00 a.m.—Disinfection of Nursery Stock by Carbon Bisulfid and by Hot Water. Prof. BIOLETTI.  
 10:00-12:00 p.m.—Demonstration of Disinfection Methods. Prof. BIOLETTI.

## MONDAY, MAY 17.

- 9:00 a.m.—The Gipsy and Brown Tail Moths. Prof. HERMS.  
 10:00 a.m.—California Pruning Purposes and Practices. Prof. WICKSON.  
 11:00 a.m.—The Control of the Codling Moth. Prof. WOODWORTH.  
 2:00 p.m.—Diagnostic Characters among the Acarina. Prof. WOODWORTH.  
 3:00-5:00 p.m.—Practical Exercise in the Identification of Mites. Prof. WOODWORTH.

## TUESDAY, MAY 18.

- 9:00 a.m.—The Fruit Flies. Prof. HERMS.  
 10:00 a.m.—California Pruning Purposes and Practices. Prof. WICKSON.

- 11:00 a.m.—The Control of the Peach Worm. Prof. WOODWORTH.  
 2:00 p.m.—The Rusts and their Control. Prof. BABCOCK.  
 3:00-5:00 p.m.—Practical Demonstration of the Species of Rusts  
 Causing Serious Plant Diseases. Prof. BABCOCK.

#### WEDNESDAY, MAY 19.

- 9:00 a.m.—Common Eastern Pests not in California. Prof. HERMS.  
 10:00 a.m.—California Cultivation Policies and Methods. Prof.  
 WICKSON.  
 11:00 a.m.—The Control of the Potato Worm. Prof. WOODWORTH.  
 2:00 p.m.—The Plant Diseases Due to Smuts. Prof. BABCOCK.  
 3:00-5:00 p.m.—Practical Demonstrations of Smut Fungi. Prof.  
 BABCOCK.

#### THURSDAY, MAY 20.

- 9:00 a.m.—Common European and Asiatic Fruit Pests not in Cali-  
 fornia. Prof. HERMS.  
 10:00 a.m.—Cultivation and Irrigation. Prof. WICKSON.  
 11:00 a.m.—The Control of Grasshoppers. Prof. WOODWORTH.  
 2:00 p.m.—The Plant Diseases caused by Mildews. Prof. BAB-  
 COCK.  
 3:00-5:00 p.m.—Practical Demonstrations of Species of Mildew.  
 Prof. BABCOCK.

#### FRIDAY, MAY 21.

- 9:00 a.m.—The Application of Fungicides. Prof. BABCOCK.  
 10:00 a.m.—The Outlook for California Fruit Industries. Prof.  
 WICKSON.  
 11:00 a.m.—The Argentine Ant in California. Prof. WOODWORTH.  
 2:00 p.m.—Pear Blight, Peach Blight, and other Fungus Diseases.  
 Prof. BABCOCK.  
 3:00-5:00 p.m.—Practical Demonstration of Plant Diseases. Prof.  
 BABCOCK.

In addition to the above course of instruction there will be numerous lectures and exercises incident to the closing days of the college term that will be of interest to the students in the short course and which they may attend. These will be announced from week to week in the University CALENDAR and in the college and local papers.

Evening lectures on general topics particularly for students in this course have been arranged as follows, the exact dates to be announced later:



Insects in their relation to Public Health. Prof. W. B. HERMS.  
 Bacteria and their rôle in Farm Life. Prof. C. B. LIPMAN.  
 Pure Food and the National and California Food Laws. Prof. M. E.  
 JAFFA.

Cereal Improvement in California. Prof. G. W. SHAW.

The publications of the Experiment Station contain much information that will be of value to those interested in this course and will be sent free on application to residents of the State. A list of those available for distribution is given on following pages. For copies of these bulletins or for further information relative to this short course address

E. J. WICKSON,  
 Dean of the College of Agriculture,  
 Berkeley, California.

## PUBLICATIONS OF THE AGRICULTURAL EXPERIMENT STATION AVAILABLE FOR DISTRIBUTION.

### REPORTS.

- 1896. Report of the Viticultural Work during the seasons 1887-93, with data regarding the Vintages of 1894-95.
- 1897. Resistant Vines, their Selection, Adaptation, and Grafting. Appendix to Viticultural Report for 1896.
- 1900. Report of the Agricultural Experiment Station for the year 1897-98.
- 1902. Report of the Agricultural Experiment Station for 1898-1901.
- 1903. Report of the Agricultural Experiment Station for 1901-03.
- 1904. Twenty-second Report of the Agricultural Experiment Station for 1903-04.

### TECHNICAL BULLETINS—ENTOMOLOGICAL SERIES.

Vol. 1, No. 2. Catalogue of the Ephydridæ.

### BULLETINS.

- Reprint.* Endurance of Drought in Soils of the Arid Region.
- No. 128. Nature, Value and Utilization of Alkali Lands, and Tolerance of Alkali. (Revised and Reprint, 1905.)
- 133. Tolerance of Alkali by Various Cultures.
- 140. Lands of the Colorado Delta in Salton Basin, and Supplement.
- 141. Deciduous Fruits at Paso Robles.
- 142. Grasshoppers in California.



147. Culture Work of the Substations.
148. Resistant Vines and their Hybrids.
149. California Sugar Industry.
150. The Value of Oak Leaves for Forage.
151. Arsenical Insecticides.
152. Fumigation Dosage.
153. Spraying with Distillates.
154. Sulfur Sprays for Red Spider.
156. Fowl Cholera.
159. Contribution to the Study of Fermentation.
160. The Hop Aphis.
161. Tuberculosis in Fowls. (Reprint.)
162. Commercial Fertilizers. (Dec. 1, 1904.)
163. Pear Scab.
165. Asparagus and Asparagus Rust in California.
167. Manufacture of Dry Wines in Hot Countries.
168. Observations on Some Vine Diseases in Sonoma County.
169. Tolerance of the Sugar Beet for Alkali.
170. Studies in Grasshopper Control.
171. Commercial Fertilizers. (June 30, 1905.)
172. Further Experience in Asparagus Rust Control.
174. A New Wine-Cooling Machine.
175. Tomato Diseases in California.
176. Sugar Beets in the San Joaquin Valley.
177. A New Method of Making Dry Red Wine.
178. Mosquito Control.
179. Commercial Fertilizers. (June, 1906.)
180. Resistant Vineyards.
181. The Selection of Seed-Wheat.
182. Analysis of Paris Green and Lead Arsenate. Proposed Insecticide Law.
183. The California Tussock-moth.
184. Report of the Plant Pathologist to July 1, 1906.
185. Report of Progress in Cereal Investigations.
186. The Oidium of the Vine.
187. Commercial Fertilizers. (January, 1907.)
188. Lining of Ditches and Reservoirs to Prevent Seepage and Losses.
189. Commercial Fertilizers. (June, 1907.)
190. The Brown Rot of the Lemon.
191. California Peach Blight.
192. Insects Injurious to the Vine in California.
193. The Best Wine Grapes for California; Pruning Young Vines; Pruning the Sultanina.
194. Commercial Fertilizers. (Dec., 1907.)
195. The California Grape Root-worm.
196. Eucalyptus in California.
197. Grape Culture in California. Improved Methods of Wine Making; Yeasts from California Grapes.
198. The Grape Leaf Hopper.
199. The Bovine Tuberculosis.
200. Gum Disease of Citrus Trees in California.
201. Commercial Fertilizers.

## CIRCULARS.

- No. 1. Texas Fever.  
 2. Blackleg.  
 3. Hog Cholera.  
 4. Anthrax.  
 5. Contagious Abortion in Cows.  
 7. Remedies for Insects.  
 9. Asparagus Rust.  
 10. Reading Course in Economic Entomology. (Revision.)  
 11. Fumigation Practice.  
 12. Silk Culture.  
 15. Recent Problems in Agriculture. What a University Farm  
     is For.  
 16. Notes on Seed-Wheat.  
 17. Why Agriculture Should be Taught in the Public Schools.  
 18. Caterpillars on Oaks.  
 19. Disinfection of Stables.  
 20. Reading Course in Irrigation.  
 21. The Advancement of Agricultural Education.  
 22. Defecation of Must for White Wine.  
 23. Pure Yeast in Wineries.  
 24. Olive Pickling.  
 26. Selection and Preparation of Vine Cuttings.  
 27. Marly Subsoils and the Chlorosis or Yellowing of Citrus  
     Trees.  
 28. A Preliminary Progress Report of Cereal Investigations,  
     1905-07.  
 29. Preliminary Announcement concerning Instruction in Practi-  
     cal Agriculture upon the University Farm, Davisville, Cal.  
 30. White Fly in California.  
 31. The Agricultural College and Its Relationship to the Scheme  
     of National Education.  
 32. White Fly Eradication.  
 33. Packing Prunes in Cans. Cane Sugar vs. Beet Sugar.  
 34. California State Farmers' Institute at the University Farm.  
 35. Southern California Pathological Laboratory and Citrus  
     Experiment Station.  
 36. Analyses of Fertilizers for Consumers.  
 37. Announcement of Farmers' School Courses, 1908.  
 38. The Argentine Ant in California.  
 39. Instruction in Practical Agriculture at University Farm.  
 40. State Farmers' Institute at University Farm.  
 41. The School of Agriculture on the University Farm.

*Copies may be had on application to* DIRECTOR OF EXPERIMENT  
 STATION, Berkeley, Cal.